The example which we exhibit with this article is from Barfreston Church, Kent, copied from a drawing by Wm. Twopenny, Esq., and is introduced for the purpose of shewing the ultimate condition into which Norman architecture must fall. However strongly built, and with whatever expense of abutment, time is sure to bring all Norman edifices into the same falling, settled, and decrepit state in which Pointed Architecture, which is erected with timely and insufficient abutment surely comes.

In this specimen will be seen where the abutments have given way, how they have been forced over by the injurious arch-crowns pendent in jeopardy; and in addition will be observed where occur the cracks in the arches. Now these are precisely at the places where the Freemasons, after they had acquired a right knowledge of the use of pointed arches, would have left off carrying up an arch any further, for the portions of these Romanesque semicircular arches which remain below the fractured arch-crowns comparatively sound, are just such portions of the arched-work as would, if brought so as to meet together, form pointed arches; the decrepitude of age which had fallen upon innumerable buildings at the time no doubt taught the Freemasons, as soon as pointed arches came into use, how much lighter, cheaper, sounder, and more durable than semicircular arches they were; and what a culpable folly it would have been to return to the use of Romanesque arches at the expense of soundness, wisdom, and constantly increased.

Lately, a semicircular vault of a church fell, and slew the clergyman; now, if the vaulting over that building had been a Freemasonic vault of Pointed Architecture, aspiring loftily,—though thin,—broad, yet scarcely leaving its bed,—with scarcely any part of it so tilted as to slide from its seat under the shock of an earthquake,—and restrained with the economical refinement of abutment which in the glorious days of Pointed Architecture was perfected,—no such accident could have occurred.

There is at present afloat a most irrational and false idea that Norman architecture is cheap. Norman architecture is not cheap, but dear; it is considered to be cheap, because it may be made plain, coarse, and rude; but the ancients made it not plain, nor in their idea either coarse or rude, but adorned it with all the curious entail (much of it deduced from Grecian and Byzantine architecture) of which they were capable.

A small compliment is it to the builders of the so-called Norman architecture to copy from them the by-gone science of which they would never again themselves have made use after the discovery and development of Pointed Architecture, retaining that which they would not have retained, unless it be possible to imagine they would have become fools, and stripped it of the zig-zag, fillet, chevron, flower-work, hatching, scroll, and other decorations, of which even the Pointed architects continued to make use for some time after that discovery with which they became so much enraptured.

We can feel as keenly as any one the sublimity of effect produced by the contrasting of its broad and massive piers and other parts, with rich carvings of a primitive aspect; but legitimate architecture requires something more; it must be built with the most advanced science of the time, or it becomes an affair of the profligate spendthrift, and is the only thing of the day of stark folly.

The Cambridge Camden Society, in fostering the Norman style of architecture, has given a blow to its reputation, which, if it had not sinned too deeply in other respects, it could never survive. Cambridge, celebrated for its mathematical knowledge, has received an undoubtful and unfilial blow, from the pupils of its University, so long famed for science, by promulgating such a Cimmerian darkness of ignorance in this as well as so many other subjects of architecture, a circumstance totally unparalleled in the history of architecture, and academic daring.

Intoxicated by the shallowness of knowledge, evinced in the publications of this frivolous society, in the most culpable ignorance, have these semi-skin-deep triflers sent Norman designs to New Zealand, while at home, in their very Cambridge, verily in their little pet the Round Church, the walls were thrust over by the weight of the crowns of the Romanesque arches operating against them; and though, too, over their very heads, some of the arch-stones were loose and falling out, a thing never seen in true pointed arches, which generally remain up and tight, and very often halves of them so remain when the other part of the arch has been wrenched away.

Very long the Government Church Commissioners refused to admit or to sanction any design for a church in the Norman style; but, first, the Incorporated Society for the Promotion of the Building and Enlarging of Churches and Chapels gave way, under evil advice, that society having never been half so prudent as the Government Commissioners; and at length the Commission itself relaxed into the same imprudence.

This abuse, which is disgraceful to the nineteenth century, must, with many other subjects of complaint, be remedied.

Those who erect modern Norman churches, waste one-third of the outlay, make them insensitive to the slightest settlement, retard their duration one-half, and render them rude, bald, shabby, and unworthy of the refinement and philosophy of the age.

PETRALOGY, OR THE KNOWLEDGE OF ROCKS AND STONES.

BY HENRY G. MONTAGUE, ESQ., PROFESSOR OF NATURAL PHILOSOPHY.

(*Continued from p* 256.)

In those regions of the waters which are undisturbed by tidal action, and in the absence of the requisite degree of heat, are favourable to the accumulation of sands, these pure and unmixed beds are forming in the present day; but the conditions under which they were primarily formed only exist now in a modified form, for we can hardly conceive any portion of the ocean wholly free from lime, magnesia, and other compounds, which, uniting with the sands, form so extensive and indefinable a class of rocks and mineral beds as is known to us in the present day. Many of the ancient beds of sand, sandstone, and quartzose rocks, were therefore produced from causes differing from those existing in the present day, the waters were then pure, being in parts and primarily entirely free from other earths except silica, and this notion is further strengthened by the appearance of the lower beds of the earth, as well as some of the quartzose rocks, all of them so far as our discoveries have extended, being of homogeneous qualities, all traces of organic remains having disappeared.

From these primary bodies formed and still forming within the waters, and changing in form and combination within and upon the earth, we turn to the next stage of combination and the results produced by the introduction of other matters. In those aqueous regions which, like the Red Sea, the Persian Gulf, and parts of the Great Pacific and Southern Oceans, are still unaffected by the tidal action of rivers, and the consequent deposition of vegetable earths and animal matters from these rivers, the sands and larger aggregate bodies covering the plains of the deep or forming hill and mountain masses are united in variable proportions with marine earths only, such as lime and magnesia, iron and animal matters, the sands vary in their form and qualities, being coarse or fine, free of larger aggregates, or uniting in their composition the fragments and bodies of molluscs, crustacea, and other species of the deep. In the progress of time the waters in localities disappear, and this oceanic soil becomes the subject of other influences; and as in the former instance of sands and the consequent changes produced by unity of parts, so is it with calcareous matters: the vast sedimentary depositions cohere at first as a mere mass of conglomerate, but as the body in all its parts becomes affected by atmospheric and chemical action, as its parts undergo a physical change, the larger aggregates, having definite proportions of particular earths in their compositions, produce in change certain determinable results which constitute the varieties of *hornblende* and hornblende rocks, and another distinguishing characteristic of many species of granite.

Again, turn to another region of the waters, in which some great river discharges its contents abstracted from the fertile soil over which it flows: here we have mixtures of soils, of the land and of the ocean, in some places continuously blending together, in others, periodically deposited; the first forming beds of uniform composition, the latter continuous successions of layers of earths; each intermediate layer having composition and character peculiar to the aqueous region in which it is proposed, and to the animal and vegetable species from which it is produced. In its second stage we see it standing above the waters as a constituent part of the dry land. Does it continue in this its primary condition? Most assuredly it does not—its aggregate masses cohere, are affected by atmospheric influences or chemical action, and these masses, or aggregates, pass by transition into felspar or felspathic rock, or such other forms and combinations as local affections may determine. Thus, where there is an excess of land vegetable and animal matters, micaceous bodies are produced.

In all these changes and vicissitudes which inorganic bodies undergo, we have the incontrovertible evidence of a beginning of things, the gradual development and increase of organic matters; the gradual appearance and increase of the beds of the earth spread over one another, uniformly and continuing to increase, so long as the causes which produced them continue to exist; and gradually or suddenly ceasing and giving place to varieties, or to objects and things of another form and composition. In the after changes we see no violence done to nature, other than that effected by atmospheric or chemical action; the bodies agglutinated become one perfect result, but still, in this intimate union passing through further changes peculiar to themselves.

Sir Richard Phillips truly observes, that "it is the proper object of philosophy to investigate the mechanism of causes, or to determine those proximate means or secondary causes by which natural phenomena are produced." To know the nature and origin of bodies and the conditions under which they exist, or by which they are enabled to assume other forms and properties, and to enter into other combinations, is the proud aim of all our inquiries, and the means by which we are enabled to assert our superiority over all created forms, and to render nature subservient to our uses. All the elemental works on geology teach you that granite is an igneous product, and here all further inquiry is supposed to cease; but passing by these narrow notions as incompatible with the present age of inquiry, my endeavour is to give a more correct, a more rational explanation of phenomena, tracing in the steps of nature from the beginning to the ultimate result; for, inasmuch as in a particular species of bird we can form no true conception of the egg from whence it was produced, or no viewing the egg, we can form no true conception of the bird, other than by observation, so it is in petralogy; to know and understand the nature and origin of rock, we must by observation observe it in all phases, from the beginning to the ultimate result.

Although granite is one of the hardest and most durable of all rocks, and in dry climates may be said to be indestructible, it is nevertheless subject to disintegration in this and many other countries, the extent of its durability depending upon its crystalline structure, and the nature of its material. Exposed to the action of waters, it rapidly decomposes, its exterior surface peeling away, and the rents and fissures continually widening, it is apt to separate in large masses, and to assume most extraordinary forms of large artificial structures. At Huelgonet in Lower Brittany, and also in the Vosges, enormous masses are seen piled on one another, forming very singular groups; the granites being here divided into masses by fissures, which are filled up with granite possessing less solidity; this latter is sooner acted upon by atmospheric agency, and by its disintegration the masses become partly detached, and adopt various positions. This singular appearance is often observable in the East, in the new dried-up beds of lakes.

Sowerby makes mention of a curious kind of granite found in the Island of Corsica, termed orbicular granite, it has a base of ordinary grey granite which, however, in most parts exhibits a considerable portion of hornblende. Its particular characteristic is a